

ABSTRACT

The presence of activated neutrophils in areas of inflammation in arthritic joints and in periodontitis results in the deposition of myeloperoxidase onto the extracellular matrix protein surface. The resultant production of the reactive HOCl, Cl₂, and N-chloramines causes the pyridinium cross-links and lysine/hydroxylysine amino acids in the collagen to be oxidized, thereby leading to an increased susceptibility of the collagen to proteolytic degradation, with the subsequent loss of matrix proteins at sites of inflammation. The present invention relates to methods of diagnosing inflammatory diseases or conditions by detecting and monitoring the level of chlorinated compound(s) that result from the oxidation of pyridinium and and lysine/hydroxylysine amino acids of collagen types I, II, III, IX, and XI by HOCl, Cl₂, and N-chloramines.